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claims

1. Highly oxidation resistant component (1),
5 having a substrate (4),
a protective layer (17),
which consists of
an intermediate MCrAlY layer zone (16) on or near the
substrate (4),
10 wherein M is at least one element out of the group Co,
Fe, Ni,
and an outer MCrAlY layer zone (19)
which has the structure of the phase γ -Ni and has a
content of Aluminum of up to 6.5wt%, and
15 wherein the outer MCrAlY layer zone (19) is onto the
intermediate MCrAlY layer zone (16),
and wherein the outer MCrAlY zone (19) consists of pure
 γ -Ni phase.
- 20 2. Highly oxidation resistant component according to claim
1,
wherein the protective layer (17) consists of two
separated layers (16, 19).
- 25 3. Highly oxidation resistant component according to claim
1,
with a continuously graded concentration of the
composition of the intermediate and outer zone (16, 19)
inside the protective layer (17).
- 30 4. Highly oxidation resistant component according to claim
1,
wherein the outer layer zone (19) is thinner than the
intermediate layer (16) on or near the substrate (4).

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5. Highly oxidation resistant component according to claim
1,
5 wherein the intermediate MCrAlY-layer zone (16) has the composition (in wt%): 10% - 50% Co, 10% - 40% Cr, 6% - 15% Al, 0,02% - 0,5% Y, Ni base.
 6. Highly oxidation resistant component according to claim
10 1,
wherein the intermediate MCrAlY-layer (16) or the outer layer zone (19) contains at least one further element such as (in wt%): 0,1% - 2% Si, 0,2% - 8% Ta or 0,2% - 5% Re.
15
 7. Highly oxidation resistant component according to claim
1,
wherein the Yttrium of MCrAlY of the intermediate MCrAlY zone (16) or the outer zone (19) is added and/or at least 20 partly replaced by at least one element out of the group Hf, Zr, La, Ce and/or other elements of the Lanthanide group.
 8. Highly oxidation resistant component according to claim
25 1,
wherein the outer layer (19) zone has the composition (in wt%): 15 - 40% Cr, 5 - 80% Co, 3 - 6.5% Al and Ni base.
 9. Highly oxidation resistant component according to claim
30 1,
wherein the outer layer (19) zone has the composition (in wt%): 20 - 30% Cr, 10 - 30% Co, 5 - 6% Al and Ni base.
- 35 10. Highly oxidation resistant component according to claim
1,
wherein the MCrAlY layer zone (16, 19) contains Ti

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(Titanium) and/or Sc (Scandium).

11. Highly oxidation resistant component according to claim

1,

5 wherein on the outer layer zone (19) a thermal barrier
coating (13) is formed.

12. Highly oxidation resistant component according to claim 8

10 or 9,

wherein the rhenium content (Re) is between 0.2 and 2wt%.

13. Highly oxidation resistant component according to claim

11,

15 wherein a heat treatment prior to applying a thermal
barrier coating is carried out
in an atmosphere with a low oxygen partial pressure,
especially at 10^{-7} and 10^{-15} bar.